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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,206	07/05/2005	Jurgen Schmidt-Thummes	273621US0PCT	7671
22850	7590	09/03/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER BERNSHTEYN, MICHAEL	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			09/03/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/541,206	<b>Applicant(s)</b> SCHMIDT-THUMMES ET AL.	
	<b>Examiner</b> MICHAEL M. BERNSHTEYN	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office Action follows a response filed on May 30, 2008. Claim 8 has been amended; claims 9-12 have been added; no claims have been cancelled.
2. In view of amendment(s) and remarks the rejection of claim 8 under 35 U.S.C. 112, 2<sup>nd</sup> paragraph has been withdrawn.
3. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.
4. Claims 1-12 are pending,

### ***Claim Rejections - 35 USC § 103***

5. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.
6. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrowicki et al. (U.S. Patent 5,910,534) in view of Basu (U.S. Patent 4,458,057), for the rationale recited in paragraph 2 of Office Action dated on March 19, 2008, and comments below.
7. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrowicki et al. (U.S. Patent 5,910,534) in view of Kimura (U.S. Patent 4,985,514) or Egraz et al. (U.S. Patent 6,184,321).

With regard to the limitations of claims 9 and 10, Ostrowicki discloses a process for preparing stable, aqueous dispersions of copolymers obtainable by emulsion polymerisation of

from 20 to 80 parts by weight of conjugated aliphatic dienes, b) from 20 to 80 parts by weight of vinyl aromatic compounds,

c) from 0.1 to 10 parts by weight of ethylenically unsaturated carboxylic acids and/or dicarboxylic acids,

d) from 0 to 20 parts by weight of ethylenically unsaturated carboxylic acid nitrites and

e) from 0 to 20 parts by weight of copolymerisable vinyl compounds differing from component b)

in the presence of water and of 0.1 to 5 parts by weight of emulsifiers, referred to 100 parts by weight of components a) to e), and in the presence of water-soluble initiators, the emulsifiers used being

f) sulphuric acid half-esters of ethoxylated fatty acid alcohols and/or

g) salts of esters and half-esters of alkylpolyoxyethylene sulphosuccinates, g)

salts of esters and half-esters of alkylpolyoxyethylene sulphosuccinates,

moreover with 15 to 85 wt. % of the total of the emulsifiers used being added within the time in which up to 40% of the overall conversion of the components used is attained, and with 1 to 50% of the carboxylic acid groups contained in component c) being neutralized by **the addition of bases** during the emulsion polymerization (col. 1, line 65 through col. 2, line 25).

Ostrowicki discloses that it can be of advantage at the very beginning of the polymerisation to add to the reaction mixture up to 15 wt. % of the total quantity of emulsifiers used and then to add the remaining quantity, that is, up to 75 wt. %, of the

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total quantity of emulsifiers used within the time in which up to 40% of the overall conversion of the components used is attained (col. 4, lines 29-35).

The only difference between the claimed process for preparing a stable aqueous copolymer dispersion and the prior art is that the partial neutralization of the ethylenically unsaturated carboxylic acids and/or dicarboxylic acids occurs prior to the polymerization.

Kimura discloses the method is attained by having 10 to 50 mol %, preferably 10 to 40 mol %, of the acid group-containing monomer in the monomer component **neutralized in advance** of subjecting the monomer component to aqueous solution polymerization and subsequently adding basic substances (col. 7, lines 40-47).

Egraz exemplifies that acrylic acid may be partially pre-neutralized by, e.g., sodium hydroxide prior to the polymerization (Example 1, lines 37-53).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ that the partial neutralization of the ethylenically unsaturated carboxylic acids and/or dicarboxylic acids occurs **prior to the polymerization** as taught independently by Kimura and Egraz in Ostrowicki's process for producing stable aqueous dispersions of copolymers with reasonable expectation of success because it has been found that when the monomer component having the acid group-containing monomer unneutralized is polymerized by the use of an ordinary radical polymerization initiator, the produced polymer contains residual monomer in a large amount. The water absorbent polymer excelling in absorption properties and containing residual monomer only in a small amount is obtained only when the

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production is carried out by the method, namely subjecting the monomer component having the acid group-containing monomer **neutralized in advance** to a ratio falling in the specific range **to aqueous solution polymerization** (US'514, col. 7, line 65 through col. 8, line 13), and thus to arrive at the subject matter of instant claims 9 and 10.

With regard to the limitations of claims 11 and 12, Ostrowicki exemplifies that the aqueous monomer mixture comprises styrene, acrylic acid and butadiene (Examples 3-10, col. 9 through col. 13).

### ***Response to Arguments***

8. Applicant's arguments filed on May 30, 2008 have been fully considered but they are not persuasive.

It appears that the focal Applicants argument resides in the contention that In Basu, a carboxylic acid group-containing polymer is neutralized by the addition of a base. This is contrary to the requirement of the present claims which require that the acid groups of a carboxylic acid group-containing monomer are neutralized prior to polymerization.

Therefore, Basu does not disclose a process in which the carboxylic acid groups of a monomer are neutralized before the monomers are polymerized to form the polymer (page 9, the last paragraph), Applicant also contends that at best, Basu discloses neutralizing an emulsifier, which are not carboxylic acid-containing monomers but are, instead, acid group-containing polymers (page 10, 1<sup>st</sup> paragraph).

9. As it was already mentioned in the previous Office action dated on March 19, 2008, Basu discloses that the dispersing agent employed is an unneutralized

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crosslinked interpolymer of one or more carboxylic acid monomers with a polyunsaturated compound having a plurality of terminally unsaturated polymerizable groups, for example, a crosslinked **polyacrylic acid polymer**. After forming the dispersion or emulsion of the polymerization reaction ingredients and prior to polymerization thereof, it is necessary, and most important to **partially neutralize the reaction medium**, in order to insure the stabilization of the monomer droplets therein during the subsequent stirred reaction period. This neutralization is accomplished by **adding to the reaction medium, prior to the start of the polymerization reaction, a water-soluble base**, such as sodium hydroxide, in order to adjust the pH of said medium in a range of about 4.0 to about 7.0 (col. 3, line 45 through col. 4, line 7).

It is clear that the reaction mixture of Basu contains not only the dispersing agent, but also other monomers, and therefore acrylic acid would be partially neutralized by sodium hydroxide prior to the polymerization.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael M. Bernshteyn/



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/M. M. B./  
Examiner, Art Unit 1796

/Randy Gulakowski/  
Supervisory Patent Examiner, Art Unit 1796